



MANUAL OF REFERENCE SERVICES

July 1, 1999

**TEXAS DEPARTMENT OF HEALTH
BUREAU OF LABORATORIES
1100 WEST 49TH STREET
AUSTIN, TEXAS 78756-3194**

**(512) 458-7318
Fax Number 512-458-7294
<http://www.tdh.state.tx.us/lab>
CLIA # 45D0660644
Medicaid # 45L0008688
Medicare #CL0688**

**Walter D. Wilkerson, Jr., M.D., Chair
Texas Board of Health**

**William R. Archer III, M.D.
Commissioner of Health
Texas Department of Health**

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Texas Department of Health

William R. Archer III, M.D.
Commissioner of Health

<http://www.tdh.state.tx.us>

Patti J. Patterson, M.D., M.P.H.
Executive Deputy Commissioner

1100 West 49th Street
Austin, Texas 78756-3199
512/ 458-7111

July 1, 1999

Dear TDH Laboratory Customer:

We are pleased to provide you the most recent version of the Manual of Reference Services. The manual is available on the Internet (<http://www.tdh.state.tx.us/lab>) and can be downloaded. Please use this manual as a reference guide.

We have designed the manual to give you the latest information on tests performed in the Bureau of Laboratories. It also provides a brief overview of the Laboratory, telephone numbers, and procedures for the submission, collection and handling of specimens. Also, we have included a list of forms for submitting specimens.

If we can be of any assistance to you, please contact the Bureau of Laboratories at (512) 458-7318 or FAX (512) 458-7294. Thank you for your continued support.

Sincerely,

David L. Maserang, Ph.D.
Chief, Bureau of Laboratories

Enclosure

Program Descriptions

The Bureau of Laboratories provides state of the art biological and chemical analyses for the Texas Department of Health (TDH), other state agencies, and other public and private health care interests. The Bureau assists local health officials and private physicians with the investigation of public health problems. The Bureau of Laboratories has a staff of about 385 scientists, technicians, administrative and support personnel.

The Bureau includes five divisions:

- ! Quality & Regulatory Affairs Division
- ! Chemical Services Division;
- ! Microbiological Services Division;
- ! Environmental Sciences Division; and
- ! Support Services Division.

The **Quality and Regulatory Affairs Division** ensures a laboratory system wide customer service philosophy and practice, that laboratory services are of the highest quality and produce data that is scientifically valid and defensible and maximizes effectiveness of organizational structure, processes and operations. The Division includes the following programs: Quality Assurance, Laboratory Certification, Safety, Environmental Compliance and Customer Service. The Division is responsible to ensure the laboratory complies with federal, state and local regulations that affect each of these programs and for taking the lead role in improving quality and customer service within the bureau.

The **Chemical Services Division** provides analytical testing services in support of women and children's health by providing prenatal screening for expectant mothers, blood screening for newborns, and blood testing for Texas Health Steps. The Division provides health testing services for adults through glucose, cholesterol, and genetic screening. More than 1.5 million samples accounting for more than six million analyses annually are processed by the Division. The internationally recognized newborn screening laboratory is the largest of its type in the world.

The **Microbiological Services Division** provides diagnostic and reference testing for hospitals, reference laboratories, physicians and TDH programs in bacteriology, mycobacteriology (TB), parasitology, serology/immunology, virology, and entomology. Testing is supported by high quality, internally produced culture media and other reagents. State of the art molecular epidemiological techniques assist Infectious Disease and Epidemiology Division in their efforts to contain the spread of illness by tracing an outbreak of disease to its likely origin. The Consumer Microbiology Section conducts surveillance testing of water, milk, shellfish and other products to insure the public's health. The technical staff trains laboratorians from hospitals and reference laboratories throughout the state through both organized workshops and hands-on bench training. The Division's 106 member staff is divided into 15 separate laboratory sciences which provide diagnostic testing on more than 700,000 specimens per year.

The **Environmental Sciences Division** supports programs that monitor environmental quality. The Division is the principal drinking water testing laboratory for the State of Texas, performing the federal Safe Drinking Water Act compliance tests. Test results are provided by this Division to programs which monitor consumer product safety, identify lead contamination sources, ensure that seafood and shellfish are safe for public consumption, regulate the use of radioactive materials, and assess levels of environmental pollution.

The **Support Services Division** provides the following bureau-wide operational and administrative functions: personnel management, open record requests, automation and instrument support, financial

and billing services, specimen acquisition, and test result reporting.

TELEPHONE NUMBERS

David L. Maserang, Ph.D. Bureau Chief	(512) 458-7318 FAX (512) 458-7294 E-Mail - David.Maserang@tdh.state.tx.us
Sherry Clay, MA, Director Quality & Regulatory Affairs Division	(512) 458-7318 FAX (512) 458-7294 E-Mail - Sherry.Clay@tdh.state.tx.us
Patricia Koehn, RN, MBA, Director, Support Services Division	(512) 458-7318 FAX (512) 458-7294 E-Mail - Pat.Koehn@tdh.state.tx.us
Brad Therrell, Ph.D., Director Chemical Services Division	(512) 458-7430 FAX (512) 458-7221 E-Mail -Brad.Therrell@tdh.state.tx.us
Elizabeth Pierson, MBA, Director Environmental Sciences Division	(512) 458-7587 FAX (512) 458-7757 E-Mail - Liz.Pierson@tdh.state.tx.us
Bruce Elliott, Dr.P.H., Director Microbiological Services Division	(512) 458-7760 FAX (512) 458-7452 E-Mail - Bruce.Elliott@tdh.state.tx.us

Telephone numbers for supplies:

**Specimen mailing, Texas Health Steps, and Newborn Screening (512) 458-7661 or
FAX (512) 458-7672**

(For faxed orders, please combine your cover sheet and order form into one page, if possible!)

Rabies Notification: 1-800-252-8163

Other telephone and fax numbers:	Telephone	Fax
Chemical Reporting	(512) 458-7578	(512) 458-7294
Chemistry Check-in	(512) 458-7598	(512) 458-7294
Texas Health Steps (EPSDT) Reporting	(512) 458-7578	(512) 458-7294
Lab Accounting	(512) 458-7317	(512) 458-7294
Microbiology Check-in	(512) 458-7598	(512) 458-7294
Microbiology Reporting	(512) 458-7578	(512) 458-7294
Newborn Screening Reporting	(512) 458-7331	(512) 458-7221
Specimen Acquisition	(512) 458-7598	(512) 458-7294
Genetic Testing Center (Denton)	(940) 383-3561 or (800) 687-4363	(940) 382-6235

**Texas Department of Health
Local Health Department Laboratories**

ABILENE - (915) 692-5600 FAX: 690-6707
Larry Johnson, Administrator
Abilene - Taylor County Public Health District
Attn: Nancy Jennings
Laboratory Manager
(E-Mail - jenningsn@abilenetx.com)
2241 South 19th Street (79605)
P. O. Box 6489 (79608-6489)
Abilene, Texas

AUSTIN - Lab. 469-2171 FAX: 469-2161
Johnny Clarke
Laboratory Director
Austin Dept. of Health & Human Services
15 Waller St.
Austin, Texas 78702

BRYAN - (409) 361-4440
Lab. FAX: 823-2275
Ken Bost, Director
Brazos County Health Department
Attn: Bill Rosser.
Laboratory Services Director
(E-Mail - brosser@co.brazos.tx.us)
201 North Texas Avenue
Bryan, Texas 77803-5317

CORPUS CHRISTI - (361) 851-7200, Lab. 851-7214
Lab. FAX: 851-7295
Nina M. Sisley, M.D., Director
Corpus Christi-Nueces Co. Public Health Dist.
Attn: Irma Rios MPHA, M(ASCP)
Laboratory Director
(E-Mail - irios@ccpiL00.tdh.state.tx.us)
1702 Horne Road (78416)
P. O. Box 9727 (78469)
Corpus Christi, Texas

DALLAS - (214) 819-1950, Lab. Fax: 819-2896
Karine Lancaster, M.D., Medical Director
Dallas County Department of Health & Human Services
Attn: Edward Bannister, Ph.D.
Division Manager, Laboratory
(E-Mail - ebannister@juno.com)
2377 N. Stemmons Fwy.
Dallas, Texas 75207

EL PASO - (915) 771-5701, Lab 543-3536
Lab. FAX: 543-3652
Jorge C. Magaña, M.D., Director
El Paso City-County Health and
Environmental District
Attn: Joe Veale, Jr.
Laboratory Director
(E-Mail -tdhelpil00/jveale)
222 S. Campbell
El Paso, Texas 79901

FORT WORTH - (817) 884-1133, Lab. 871-7249
Lab. FAX: 871-7247
G. K. Maenius, Acting Director
Tarrant County Public Health Department
Attn: Guy C. Dixon, Ph.D.
Laboratory Manager
(E-Mail - guydixon@juno.com)
1800 University Drive
Fort Worth, Texas 76107

GREENVILLE - (903) 408-4140, Lab. 408-4142
FAX: 454-3721
Robert F. Deuell, MD, Director
Greenville-Hunt County Health Department
Attn: Joe Lilly
Laboratory Director
(E-Mail - huntchd@koyote.com)
Courthouse Room 402
2500 Lee Street
Greenville, Texas 75401

HOUSTON - (713) 794-9311, Lab. 558-3400
Lab. FAX: 794-9681
Attn: S. Vern Juchau, Ph.D., M.P.H.
Chief, Laboratory Services
(E-mail - vjuchau@netscape.net)
1115 S. Braeswood
Houston, Texas 77030
Houston Health & Human Services Dept. Lab.
1115 South Braeswood (77030)

LA MARQUE - (409) 938-7221
Lab. FAX: 938-2243
Ralph D. Morris, M.D., M.P.H., Director
Galveston County Health District
Attn: Doug Simburger
Laboratory Director
(e-mail dsimburger@GCHD.org)
207 Oak Street

P. O. Box 939
La Marque, Texas 77568

LAREDO - (956) 723-2051, Lab. Ext. 259
Lab. FAX: (956) 726-2632
Jerry Robinson, Director
City of Laredo Health Department
Attn: Ricardo D. Martinez
Chief, Laboratory Services
(E-Mail - health@icsi.net)
2600 Cedar Street (78040)
P. O. Box 2337 (78044)
Laredo, Texas

LUBBOCK - Lab. (806) 775-2908
Lab. FAX: 775-3178
Tommy Camden, Director
Lubbock City Health Department
Attn: Kevin McClaran
Laboratory Director
(E-mail - KMcClaran@mail.ci.lubbock.tx.us)
1902 Texas Avenue (79405)
P. O. Box 2548 (79408-2548)
Lubbock, Texas

MIDLAND - (915) 681-7613, Lab. 681-7618
FAX: 681-7634
Garland Lang, M.D., Director
Midland Health Department
Attn: Celestino R. Garcia
Laboratory Director
3303 West Illinois - Space 22
P. O. Box 4905 (79704)
Midland, Texas

PARIS - (903) 785-4561 FAX: 737-9924
Jon Plummer, M.D.
Paris-Lamar County Health Department
Attn: Pauline McDonald
Laboratory Director
(E-Mail - plch@neto.com)
740 South West 6th Street (75460)
P. O. Box 938
Paris, Texas 75461

PORT ARTHUR - (409) 983-8800, Lab. 983-8830
FAX: 983-8889
Ernestine Wade, RN, Director
Port Arthur City Health Department
Attn: Lloyd R. Haggard
Laboratory Director
(E-Mail - lhaggard@htbbs.tdh.state.tx.us)
431 Beaumont Avenue
Port Arthur, Texas 77640

SAN ANTONIO - (210) 207-878

Lab. (210) 207-8820 Lab. FAX: 207-2159
Fernando Guerra, M.D., M.P.H., Director
San Antonio Metropolitan Health District
Attn: Roger Pollok
Laboratory Director
332 West Commerce
San Antonio, Texas 78205-2489

SWEETWATER - (915) 235-5463

Lab. FAX: 236-6856
Don Ware, R.S., Director
Sweetwater-Nolan County Health Department
Attn: Don Ware, R.S.
Laboratory Director
(E-Mail swnchd@camelott.com)
301 East 12th Street
P. O. Box 458
Sweetwater, Texas 79556

TYLER - (903) 535-0030, Lab. 535-0090

Lab. FAX: 535-0097
D.E. Sciarrini, FAAMA Director
Smith County Public Health District
Attn: Tony Stevens
Laboratory Director
(E-Mail - TStevens@Tyler.net)
815 North Broadway (75702)
P. O. Box 2039 (75710)
(Lab) P.O. Box 209
Tyler, Texas

VICTORIA - (361) 578-6281, Lab. Ext. 41

Lab. FAX: 578-7046
Lanie Benson, M.D., Director
Victoria County Health Department
Attn: Eloy Saldivar
Laboratory Manager
(E-Mail - esaldiva@tisd.net)
2805 N. Navarro Street
P.O. Box 2350
Victoria, Texas 77901

WACO - (254) 750-5450, Lab. 750-5471

Lab. FAX: (254) 750-5413
Adm. FAX: (254) 750-5663
Janet Emerson, Director
Waco-McLennan County Public Health District
Attn: Laboratory Director
225 West Waco Drive
Waco, Texas 76707

WICHITA FALLS - (940) 761-7800, Lab. 761-7873

FAX: (940) 767-5242
Barbara J. Clements, RNC, Director
Wichita Falls-Wichita Co. Pub. Health Dist.
Attn: Paul G. Gwynn, Jr.
Laboratory Director
(E-Mail - odin@wf.net)
1700 Third Street
Wichita Falls, Texas 76301

HARLINGEN - (956) 444-3310

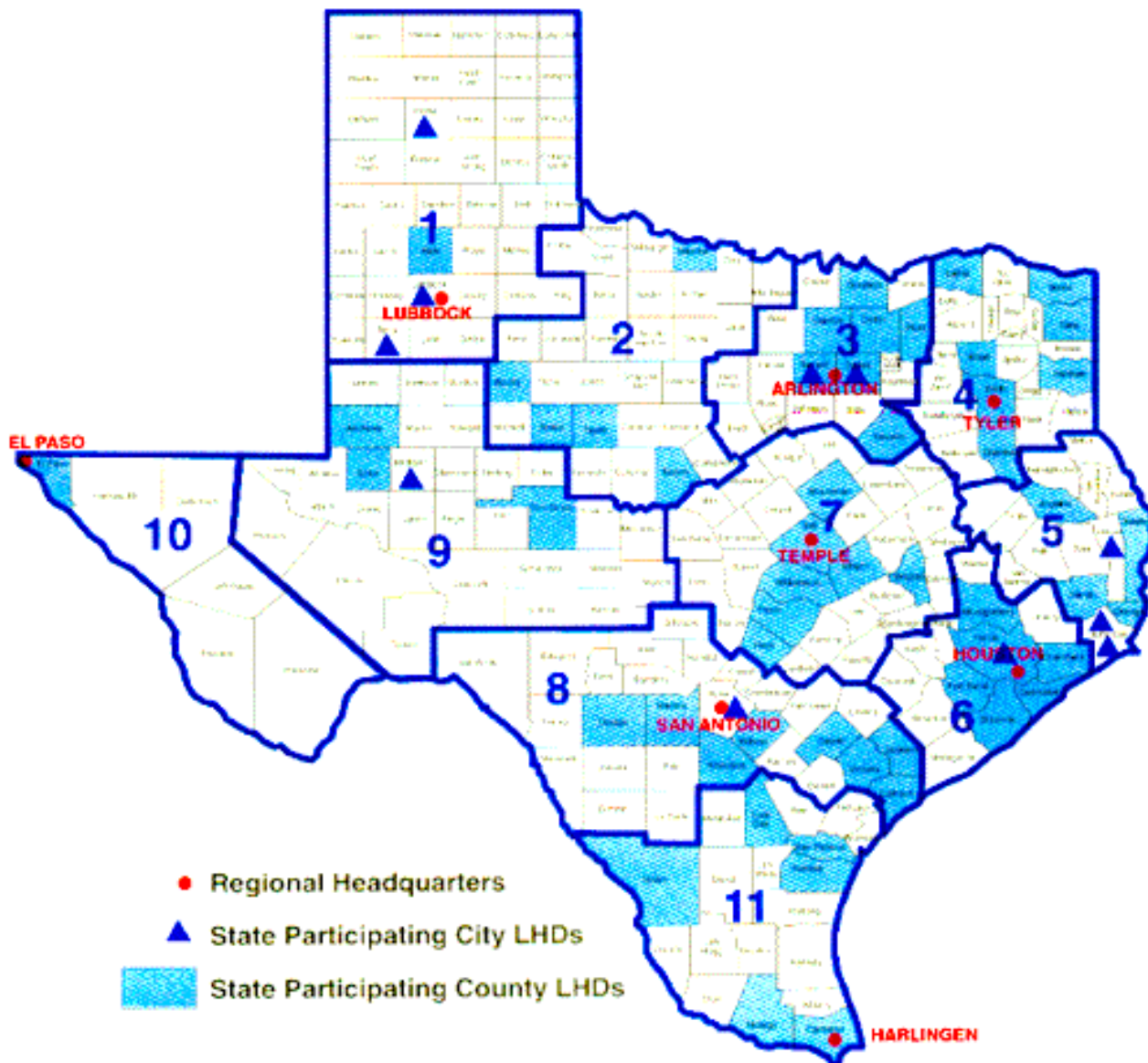
Lab. FAX: (956) 412-8794
Mary Diaz, Interim Hospital Director
South Texas Hospital
Attn: Graciela R. Garza
Laboratory Director
(E-Mail - graciela.garza @tdh.state.tx.us)
1301 Rangerville Road (78550)
P.O. Box 592 (78551)
Harlingen, Texas

TCID

Women's Health Laboratories
(210) 534-8857
FAX (210) 531-4506
Robert Bredt M.D. Lab Director
(E-Mail - rbredt@tcid.tdh.state.tx.us)
Attn: Kathy Allen, Administrative Director
(E-Mail - kallen@tcid.tdh.state.tx.us)
2303 S.E. Military
San Antonio, Texas 78223

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TEXAS DEPARTMENT OF HEALTH
PUBLIC HEALTH REGIONS
AND PARTICIPATING LOCAL HEALTH DEPARTMENTS



Stock No. AG-5 Revised 10/98

Guidelines for the Submission, Collection and Handling of Specimens

The following information is provided so that you will be aware of the Bureau of Laboratories' guidelines for the submission, collection and handling of specimens.

Telephone Inquiries

Telephone inquiries should be directed to:

(512) 458-7578 for lab results

(512) 458-7598 for inquiries about guidelines for the submission, collection, and handling of specimens

We examine specimens as carefully and rapidly as possible; however, we do not sacrifice accuracy for speed. Please consider the following information before making a telephone inquiry.

- ! Lab reporting results are given only to the original submitter.
- ! Upon receipt of the specimen at the Bureau of Laboratories, most testing will be completed in one to three days; however, newborn screening tests take 3-6 days.
- ! Confirmation of findings in certain bacteriological examinations may necessitate a short delay in reporting results.
- ! If specimens must go to another reference center, the report will be delayed for at least two weeks.
- ! Newborn screening results can be obtained through the Voice Response System (512) 458-7300 (24 hour access). This automated inquiry system requires the mother's social security number or the specimen serial number for result look up.

Of course, emergency matters may be pursued any time.

Mailing Containers/Completion of Forms

The Laboratory provides specimen mailing containers to physicians and public health laboratories and water sample containers to any citizen upon request. The containers are the property of the State of Texas and must not be used for any purpose other than the shipment of specimens to the TDH laboratory.

Each container may contain specimen identification forms and special instructions, if applicable, or a "master copy" form should be used. If a "master copy" is used, please submit on an 8 ½" x 11" piece of paper. Please do not cut the form into smaller individual forms. The completed forms must

accompany the specimen to avoid delays. Forms should be completed as follows:

- ! Use **BOLD CAPITAL BLOCK LETTERS** to complete all information that is requested on the form.
- ! If the patient is Medicaid eligible, you **must** provide the Medicaid number.
- ! For THSteps (EPSDT) specimens, you **must** provide the Medicaid number or indicate the Title V number.
- ! **Unidentified or improperly identified specimens are unsatisfactory and they will not be tested.**
- ! We will test specimens identified by number only; however, we will not report the results until a patient's name is provided. Good laboratory practice recommends, and our federal license requires, the patient's name on the specimen vial.

THE PATIENT'S NAME ON THE SPECIMEN IDENTIFICATION FORM AND THE SPECIMEN MUST BE THE SAME. IF THEY ARE NOT THE SAME, THE SPECIMEN WILL NOT BE TESTED.

Submission of Specimens

Please exercise care when submitting specimens and requesting tests. Services are offered only in keeping with departmental policies, licensure, and mission; therefore, services may be withdrawn in case of misuse or improper specimen submission. Submission of proper specimens under optimum conditions is very important. Good tests seldom can be performed on **poor** specimens.

The Bureau of Laboratories enforces the principles of Good Laboratory Practices. The submitter is responsible for ensuring expiration dating on media. We will monitor the interval between the collection and the receipt of time-sensitive specimens (newborn screening, bacteriological water, gonorrhea).

Serological Testing

The TDH Laboratory does not provide blood collection tubes; therefore, physicians should have a supply of vacuum tubes for the collection of blood specimens for serological testing. The following simple precautions must receive full consideration in collecting and handling blood specimens to prevent hemolyzed specimens:

- ! Avoid bacterial contamination, the presence of water or chemicals in syringes or tubes, freezing, and rough treatment
- ! Avoid extremely high temperatures, such as may occur in mail vans in the summer
- ! Avoid excessive handling

A single result is significant in a few serological tests. In most cases, single results will be more misleading than helpful. Therefore, the bureau's policy requires paired specimens, that is, two blood specimens collected from two to three weeks apart for most diseases. Collecting the first specimen as soon as possible after the onset of the disease is essential. Single specimens will be accepted for syphilis serology requests and for the systemic mycoses when a chronic infection is under way.

Sputum

When submitting sputum, be certain that it is from the deeper portion of the lungs. Often saliva only is submitted, and this is usually unsatisfactory. The Bureau of Laboratories in Austin provides reference and primary culturing work in mycobacteriology and mycology.

Fecal specimens for bacteriological culturing

Fecal specimens for bacteriological culturing will be accepted only under special circumstances and with prior approval (512-458-7318). When approved, these specimens must be submitted in Cary-Blair transport medium. Instruction sheet and medium available. Call (512) 458-7661.

Fecal specimens for intestinal parasites

The examination of **fecal specimens for intestinal parasites** is still viewed as a reference service and will be afforded any public health clinic, but prior arrangement is required for all other specimens (512-458-7318). The specimens must not be sent in the bacteriological preservative. The specimen should be divided into two portions, one being placed into a vial of formaldehyde, the second being placed into a vial of polyvinyl alcohol submitted x3 with each paired sample taken at 1-2 day intervals. The Bureau of Laboratories provides kits.

Fecal specimens for viral isolation

Fecal specimens for viral isolation must not be chemically preserved at all. Instead, fresh, unpreserved stools must be submitted. If there will be a delay of a few hours in getting any viral isolation specimen to the laboratory, then it must be held in the refrigerator and carried on wet ice. Longer delays will necessitate freezing and shipment of the specimen on dry ice.

Shipping

Submitters are responsible for shipping specimens in conformity with all safety and labeling regulations. Be aware that many commercial carriers no longer accept specimens. When using any carrier, including the bus service or the U.S. Postal Service, package specimens to avoid leakage or breakage. All specimen mailing containers supplied by the Bureau meet U.S. Postal Service requirements. Specimens must be packed in triple containment with sufficient absorbent material enclosed to absorb the entire volume of liquids. Pure isolates of microorganisms require:

- ! triple containment, and
- ! a biohazard label.

ALWAYS EXERT THE MAXIMUM PRECAUTION FOR THE SAKE OF THOSE WHO HANDLE THE PARCELS AND TO AVOID JEOPARDIZING THE SYSTEM FOR SHIPPING SPECIMENS.

The policy of the Bureau of Laboratories is--ALL blood specimens in a container will be considered broken if one tube in that container is broken during shipment.

Rabies specimens

The TDH Laboratory recommends shipping rabies specimens by bus. Guidelines for shipping rabies specimens are as follows:

- ! Specimens must be shipped in a sealed, sturdy container.
- ! Animal heads and wet ice must be placed in separate plastic bags that will not leak.
- ! Enclose sufficient absorbent material to keep all moisture within the container.
- ! Specimens should not be frozen because freezing delays and frequently compromises the examination.
- ! Use sufficient wet ice, or preferably cold packs, to maintain a cool environment, even with a delay of one full day.

State law requires telephone notification to this Laboratory before shipment of rabies specimens (1-800-252-8163).

Reference Services

If reference services are needed but are not provided in this laboratory system, the Bureau of Laboratories uses the services of the Centers for Disease Control and Prevention (CDC) in Atlanta, Georgia. When a particular test is available only from CDC, submitters should send the specimen to the Texas Department of Health for forwarding to the CDC.

GUIDELINES FOR SUBMISSION OF LABORATORY SPECIMENS

Texas Department of Health, Bureau of Laboratories

The requirements for the submission of diagnostic specimens through the U.S. Postal Services system are:

- (1) clinical specimens, including blood specimens, that "contain or can reasonably be expected to contain an etiological agent" must be transported in a triple container;
- (2) a limit of 50 ml total volume per outside shipping unit or container has been established;
- (3) container must contain sufficient absorbent materials to absorb the entire content of primary container in case of breakage or leakage; and
- (4) outside shipping container must be properly labeled.

THE TEXAS DEPARTMENT OF HEALTH, BUREAU OF LABORATORIES, EFFECTIVE IMMEDIATELY, WILL SUPPLY TRIPLE CONTAINERS ONLY FOR ALL TYPES OF CLINICAL SPECIMENS. USE OF TDH CONTAINERS WILL INSURE FULL COMPLIANCE WITH ALL U.S. POSTAL REQUIREMENTS.

The definition of an acceptable triple container is:

- (1) the primary container is a bottle or tube in which the specimen is collected or held, such as a feces bottle, test tube, or tube (vacutainer) of blood or serum;
- (2) the secondary container must be a durable, screw-capped, leak-proof container (Zip-lock bags are not acceptable); and
- (3) the tertiary or third container must be a fiberboard cylinder with a screw-capped lid or similar material.

TRIPLE CONTAINER + BIOHAZARD LABEL	TRIPLE CONTAINER ONLY
Pure Cultures of Bacteria, Fungi, or Viruses	All clinical specimens for isolation studies All blood or serum specimens Specimens for: Gonorrhea-Chlamydia (Gen-Probe) Program

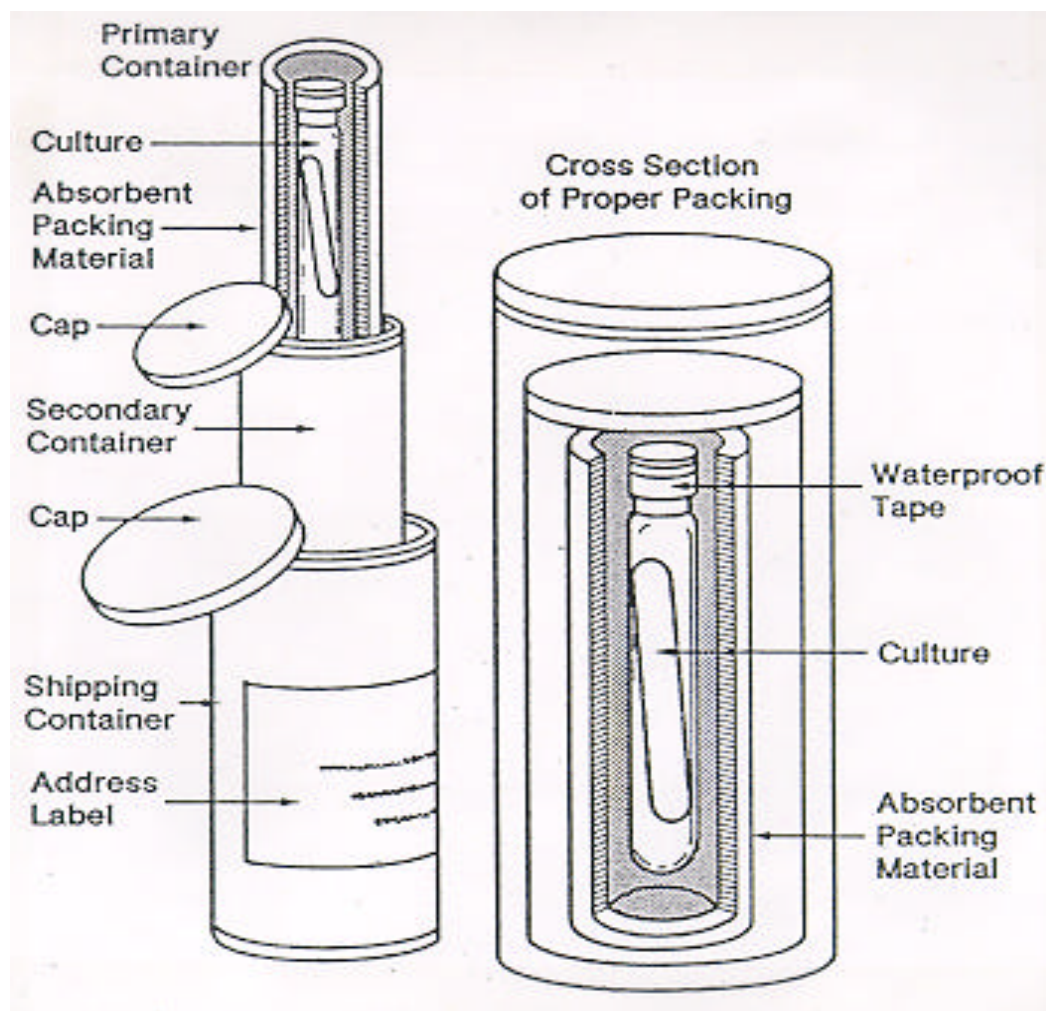
Containers are available in three sizes for blood specimens. You may order for: 1 specimen, 4 specimens, and 7 specimens. All kits for THSteps (EPSDT), Title V, RhoGam, diabetes, PKU, and thyroid specimens will include triple containers.

GUIDELINES FOR SUBMISSION OF LABORATORY SPECIMENS (CONTINUED)

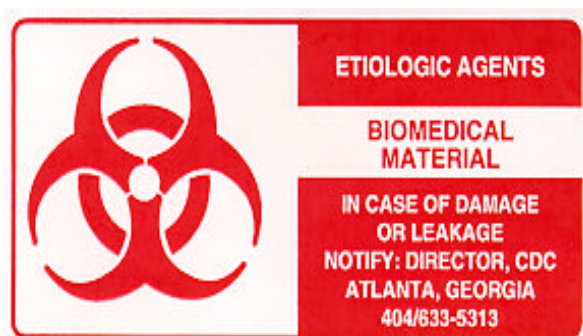
In order to insure the satisfactory receipt and proper testing of your specimens in our Laboratory, it is necessary that:

- (1) each tube of blood or serum is labeled with the name of the patient exactly the way it is written on the laboratory request form;
- (2) some absorbent material, such as paper towels, is placed in the bottom of the secondary plastic liner, then put the labeled tubes of blood or serum in the plastic liner on the absorbent material (no padding between tubes is required). Add sufficient absorbent material on top of the blood tubes so that when the cap is tightened and the container is shaken the tubes do not rattle;
- (3) the properly completed laboratory request form(s) { must have the name of patient(s) and a correct return address } is wrapped around the secondary plastic liner. Please do not cut the form into smaller individual forms. Place the secondary container in the fiberboard cylinder; and
- (4) the proper label is attached to the outside container before the specimens are mailed.

PACKAGING AND LABELING OF ETIOLOGIC AGENTS



(Red on White)



ORDER FORMS FOR CONTAINERS AND SUPPLIES**Phone No. (512) 458-7661****Fax No. (512) 458-7672**

FORM #	NAME OF THE FORM
G-6A	CONTAINERS & FORMS, LABELS & KITS
G-6B	TITLE V CONTAINER & ORDER FORM
G-399	EPSDT LABORATORY SUPPLIES FORM
	NEWBORN SCREENING SUPPLIES ORDER FORM

TEST REQUEST FORMS - CLINICAL CHEMISTRY**Phone No. (512) 458-7661****Fax No. (512) 458-7672**

FORM #	NAME OF THE FORM
G-8	DIABETES LABORATORY REQUEST
G-72	EPSDT LABORATORY REQUEST - CHOLESTEROL SCREENING
G-73	EPSDT LABORATORY REQUEST FORM - GONORRHEA/CHLAMYDIA TEST
G-74	EPSDT LABORATORY REQUEST-HIV TESTING
G-75	HYPERLIPIDEMIA LABORATORY REQUEST
G-127	NEWBORN SCREENING CONFIRMATORY TESTING
G-128	HEMOGLOBINOPATHY LABORATORY TESTING
G-400	BLOOD LEAD
G-401	TEXAS HEALTH STEPS (EPSDT) or TITLE V CHILD HEALTH LABORATORY REQUEST
G-402	HDN SCREENING LABORATORY REQUEST

TEST REQUESTS FORMS - MICROBIOLOGICAL SERVICES**Phone No. (512) 458-7578 FAX No. (512) 458-7533**

FORM #	NAME OF THE FORM
G-1	GENERAL SUBMISSION FORM (MASTER)
G-2	SYPHILIS (MASTER)
G-3	GC/CHLAMYDIA (MASTER)
G-4	RUBELLA (MASTER)
G-9	LABORATORY TEST FOR RABIES (MASTER)
G-10	MHMR HIV SEROLOGY SUBMISSION FORM (MASTER)
G-11	MHMR HEPATITIS (MASTER)
G-12	INFLUENZA VIRUS SURVEILLANCE (MASTER)
G-13	ARTHROPOD - BORNE RICKETTSIAL DISEASE SURVEILLANCE (MASTER)
G-14	MOSQUITO SURVEILLANCE ADULT/LARVAL (MASTER)
G-17	MOSQUITO EGG PADDLES (MASTER)
G-19	WATER BACTERIOLOGY
G-23	BIRD BLOOD - (MASTER)
G-32E	HEPATITIS B, SYPHILIS, RUBELLA <u>AND</u> HIV (MASTER)
G-32-1	HEPATITIS B, SYPHILIS, RUBELLA, <u>WITHOUT</u> HIV (MASTER)
G-35B	HIV SEROLOGY (MASTER)

A:\REFMAN1.WPD

Disease or Agent arranged alphabetically.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Acanthamoeba	Eye wash Cornial biopsy Contact lens/fluid	Culture			Eye wash Cornial biopsy Contact lens/fluid	Direct exam trichrome stained slide	
Acquired Immune Deficiency Syndrome	None	None	None	None	None	None	Tests for infections by opportunistic organisms are offered. See specific diseases. For antibody detection see under HIV-I.
Actinomycosis	Culture Exudate Tissue	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence.
Adenovirus	Isolate Throat Swab Conjunctival Swab Urine Stool	Isolation Identification Typing	Paired Sera	Complement Fixation	None	None	Isolation specimens must be sent frozen. Typing is done only for epidemiologic purposes and must have prior approval (Virology 512-458-7318). Serum specimens must be collected 14 days apart. A fourfold titer increase is evidence of recent infection.
Aerobic Microbe Infections: Gram-negative rods Gram-positive cocci Gram-positive rods	Culture Tissue Body Fluids	Isolation Identification	None	None	None	None	See separate listing for <i>Staphylococcus</i> and <i>Streptococcus</i> .

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Amebiasis <i>Entamoeba histolytica</i> / <i>Entamoeba dispar</i>	Feces (fresh, less than five hours)	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing	Feces	Direct Examination Formalin-Ethyl Acetate Con- centration Trichrome Stain	Fecal specimens must be sent in PVA and formalin. Referred material accepted from hospital, private, and reference labs. Most cases of extraintestinal infection will result in reactive serological tests. However, since antibodies may persist for years after clinical cure, a reactive test may not indicate active infection.
Anaerobic Microbe Infections: <i>Actinomyces</i> <i>Arachnia</i> <i>Bacteroides</i> <i>Clostridium difficile</i> <i>Clostridium</i> <i>perfringens</i> <i>Clostridium</i> , other Cocci <i>Fusobacterium</i> Gram + Nonsporing Rods	Culture Tissue Aspirate	Isolation Identification Toxin Detection	None	None	Tissue	Direct Fluorescent Antibody	Fluorescence analyses on <i>Bacteroides</i> and <i>Fusobacterium</i> are forwarded through this Laboratory to the CDC. Isolation specimens are accepted only if they come from normally sterile sites. Specimens must be sent in anaerobic transport system.
Anemia	None	None	Whole Blood-EDTA	Cyanmethemoglobin	None	None	See Hemoglobin, Total. Test is available to THSteps (EPSDT) and Title V patients.
Animal Testing	None	None	None	None	None	None	Diagnosis of animal diseases is not offered. See Rabies for exception.
Anthrax	Exudate Blood Sputum Culture	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing	None	None	Prior notification is requested. (512) 458-7582 Clinical Bacteriology CDC serology available. Single specimen and history.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
<i>Arachnia</i> Infections	Culture Tissue Aspirate	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Tissues are forwarded through this Laboratory to the CDC for fluorescence microscopy. See instructions under Anaerobic Microbe Infections.
Arbovirus Infections	-----	-----	-----	-----	-----	-----	See specific disease entities: California, Eastern, St. Louis, Venezuelan, Western Encephalitis, Dengue.
Arizona Infections <i>Salmonella (Arizona)</i>	Culture Feces	Isolation Identification	None	None	None	None	Fecal specimens are accepted only with prior approval. Isolates will be identified as <i>Salmonella</i> species.
Ascariasis	None	None	None	None	Feces Worm Sputum Tissue Section	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Adult worms should be submitted in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.
Aspergillosis	Culture Exudate Tissue	Isolation Identification	Single Serum Spinal Fluid	Immunodiffusion	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence. One or two bands are present in any clinical phase; three or more bands indicate invasive disease.
Babesiosis	None	None	Single Serum	Forwarded by TDH to CDC for testing	Blood Film	Stain	Serum specimens are forwarded to the CDC. Cross-reactions may occur with malaria.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
<i>Bacteroides</i>	Culture Tissue Aspirate	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Tissues are forwarded through this Laboratory for fluorescence studies. See instructions under <u>Anaerobic Microbe Infections</u> .
Balantidiasis	None	None	None	None	Feces	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Referred material accepted from hospital, private, and reference labs.
<i>Blastocystis hominis</i>	None	None	None	None	Feces	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Referred material accepted from hospital, private, and reference labs.
Blastomycosis	Culture Sputum Tissue	Isolation Identification Genetic Probe (Culture Confirmation)	Single Serum Spinal Fluid	Complement Fixation Immunodiffusion	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded to the CDC for fluorescence. A precipitin band denotes recent or current infection. CF titer parallels severity. Titers of 1:32 or greater are considered presumptive evidence for Blastomycosis. Negative CF reaction does not exclude the existence of <i>B. dermatitidis</i> infection. Cross-reactions occur frequently with <i>Coccidioidomycosis</i> and <i>Histoplasmosis</i> .

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Blood Lead	None	None	Whole Blood-EDTA	Atomic Absorption Erythrocyte Protoporphyrin	None	None	At least 0.5 mL whole blood (EDTA) required. Screening test is available only to patients in the THSteps (EPSDT) or Title V programs. Diagnostic testing for exposure is available to other patients under current fee schedule. Erythrocyte protoporphyrin will be measured for blood lead levels $\geq 25\mu\text{g/dL}$. Fee for service is charged.
Blood Typing	None	None	Clotted Blood	Agglutination	None	None	Blood typing and antibody screening are available only to maternity patients in HDN Screening Program. Triple containment required for mailing.
Botulism	Foods Feces Vomit Gastric Aspirate	Isolation Toxin Detection Toxin Typing	Single Serum	Toxin Detection Toxin Typing	None	None	At least 10mL of serum and 10 g of stool are required for toxin typing. Specimens and samples must be kept cold (2-8°C) or frozen. Telephone before shipping specimens. Molecular typing performed at TDH upon request.
Brevitoxin	Shellfish	Toxin Detection	None	None	None	None	Specimens accepted from public health officials only.
Brucellosis	Culture Blood	Isolation Identification	Single Serum Paired Sera	Agglutination	None	None	A fourfold rise in serum (agglutination) antibody titer or a single-serum agglutinin titer of $\geq 1:160$ is suggestive of Brucellosis when accompanied by a compatible clinical course in a patient with a history of potential exposure. There is some cross-reaction with <i>Francisella tularensis</i> .

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
California Encephalitis	Isolate Brain Mosquitoes	Isolation Identification	Paired Sera	Forwarded by TDH to CDC for testing	Mosquitoes	None	Serum specimens are forwarded to the CDC. Isolation specimens must be frozen. Generally seen in children under five years of age in late summer. For proper submission of mosquito specimens, please contact TDH Medical Entomology Lab (512) 458-7615.
<i>Campylobacter</i>	Culture Feces Rectal Swab	Isolation Identification	None	None	None	None	Fecal specimens must be unpreserved and under 4 hours old. Rectal swab must be in Cary-Blair Medium. If shipment will take longer than 4 hours, specimen must be iced.
Candidiasis	Sputum Exudate Scrapings Culture	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing.	None	None	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence. Cross-reactions occur with Torulopsosis and Cryptococcosis. Increases in precipitin bands or titer by fourfold are significant. Serologic response may reflect either transient or serious infection. Do not freeze serum specimens.
Cat Scratch Fever	None	None	Single Serum Paired Sera	Micro IFA	None	None	Sera must be collected 14 days apart. A fourfold rise in antibody titer between serum obtained early in the acute phase of illness and serum obtained during convalescent phase is convincing serological evidence of recent infection.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Chagas' Disease	Blood - Green top Lymph node Aspirate Chagoma	Isolation Identification	Single Serum Paired Sera	Forwarded by TDH to CDC for testing.	Triatoma Bugs Blood Purple Top Blood smear Lymph node Chagoma	Giemsa Stain	Serum specimens are forwarded to the CDC. Triatoma bugs are accepted for examination for trypanosomes.
Chancroid	Culture	Identification	None	None	None	None	Prior notification requested (512) 458-7582 Clinical Bacteriology
Chemistry - Clinical	None	None	None	None	None	None	Available only to patients in one of several reimbursement contract programs.
Chemistry - Environmental	None	None	None	None	None	None	Analyses are available only to state officials in the performance of their duties. Fee for service is charged to customers.
Chicken pox	----	----	----	----	----	----	See Varicella.
<i>Chlamydia</i>	Culture Endocervical Swab Endourethral Swab Ocular Swab	Isolation Identification Genetic Probe	None	None	None	None	Genetic probe is available only to those in STD Program and to adolescent THSteps (EPSDT) patients for whom collectors are provided. Isolation is for <i>Chlamydia trachomatis</i> only.
Cholera	Culture Feces Rectal Swab	Isolation Identification Typing Toxin testing	Paired Sera	Vibriocidal Antibody	None	None	Rectal swabs must be sent on Cary-Blair Medium. Immunization and cross-reactions with <i>Brucella</i> , <i>Yersinia</i> , and <i>Citrobacter</i> must be considered. Molecular typing performed at TDH upon request.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Cholesterol/Lipid Profiles	None	None	Serum	Spectrophotometric	None	None	A lipid profile requires a fasting specimen and includes total cholesterol, triglyceride, HDL and LDL. Nonfasting specimens on fee schedule includes total cholesterol and HDL. Nonfasting specimens for THSteps (EPSDT) screens are tested for total cholesterol. Fee for service is charged.
Chromoblastomycosis	Culture Crust Exudate Tissue	Isolation Identification	None	None	Crust Tissue	Direct	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence.
Cladosporosis	----	----	----	----	----	----	See Chromoblastomycosis.
Clonorchiasis	None	None	None	None	Feces Bile Tissue section Fluke ID	Direct Concentration	Fecal specimens must be sent in PVA and formalin.
<i>Clostridium botulinum</i>	----	----	----	----	----	----	See Botulism.
<i>Clostridium difficile</i>	Culture Feces	Isolation Identification Toxin detection	None	None	None	None	Fecal specimens must be unpreserved and under 4 hours old. If shipment will take longer than 4 hours, specimen must be frozen. Greater than 5 grams of feces are required.
<i>Clostridium perfringens</i>	Culture Food	Isolation Identification Toxin Detection Typing	None	None	None	None	Isolates are sent to the CDC for typing with prior approval. See instructions under Food Poisoning.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Coccidioidomycosis	Culture Sputum Exudate Tissue	Isolation Identification Genetic Probe (Culture confirmation)	Single Serum Spinal Fluid	Complement Fixation Immunodiffusion	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded to the CDC for fluorescence. CF titer parallels severity. A titer of 1:32 indicates disseminating disease. A negative CF reaction does not exclude a diagnosis of coccidioidomycosis. A precipitin band denotes recent or current infection.
Coliform - Fecal	Water	Isolation Identification Quantitation	None	None	None	None	Test is available only to health officials with 1-day notice. Sample must be iced and less than 6 hours old.
Coliform - Total	Water	Isolation Identification Quantitation	None	None	None	None	Sample must be in container provided by TDH. Water must be from a closed system and less than 30 hours old. Fee for service is charged.
Colorado Tick Fever	Isolate Blood	Isolation Identification	Paired Sera	Forwarded by TDH to CDC for testing.	None	None	Unfrozen whole blood must be sent for viral isolation. Serum specimens are forwarded to the CDC. Serum specimens are to be collected 14 days apart. A fourfold titer increase is evidence of current or recent infection. Since IgM antibodies appear 14-16 days after onset, PCR test, with prior arrangement with CDC, can be performed on blood specimens collected within 8 days after onset.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Congenital Adrenal Hyperplasia	None	None	Filter Paper Blood Spot	Radioimmunoassay	None	None	Initial and follow-up specimens are accepted only on infants in the Newborn Screening Program. Fee charged for non-Medicaid patients.
Coronavirus	Isolate Throat Swab Nasal Swab	Isolation Identification	Paired Sera	Forwarded by TDH to CDC for testing.	Stool	Electron Microscopy	Isolate and serum specimens are sent to the CDC with prior approval only. EM studies done with prior approval only. Specimens must be iced but not frozen.
Coxsackievirus	Isolate Feces Throat Swab Spinal Fluid	Isolation Identification Typing	None	None	None	None	Isolation specimens must be sent frozen.
Cryptococcosis	Culture Sputum Tissue Spinal Fluid	Isolation Identification	Single Serum Spinal Fluid	Forwarded by TDH to CDC for testing.	Spinal Fluid Tissue	Direct India Ink Mount	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded to the CDC for fluorescence.
Cryptosporidiosis	None	None	None	None	Feces	Direct Concentration Acid Fast Stain	Fecal specimens must be sent in PVA and formalin. Specimens are accepted only from public health officials. Referred material accepted from hospital, private, and reference labs.
<i>Cyclospora</i> sp.	None	None	None	None	Feces	Direct Concentration Heat Infused Acid Fast	Fecal specimens must be sent in PVA and formalin. Specimens are accepted only from public health officials. Referred material accepted from hospital, private, and reference labs.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Cysticercosis	None	None	Single Serum Spinal Fluid	Forwarded by TDH to CDC for testing	Tissue Worm Cross sections	Direct Stained slides	Serum specimens are forwarded to the CDC. A negative serological result does not rule out the disease. Rare cross-reactions occur.
Cytomegalovirus	Isolate Urine Tissue Saliva Blood	Isolation Identification	Paired Sera Single Serum (Transplant patients only)	Enzyme Immunoassay	Urine	Electron Microscopy	Specimens for viral isolation must be sent iced but not frozen. Sera must be collected 14 days apart. Significant rise in antibody level indicates recent infection or vaccination. In suspected congenital cases, sera from mother and infant must be submitted together.
Dengue Fever	Isolate Mosquitoes Serum, acute only	Isolation Identification	Single Serum Paired Sera	Enzyme Immunoassay (IgM capture and IgG)	Mosquitoes	Direct Identification Quantitation	Serum specimens for viral isolation must be frozen. While a single serum may be tested, a second serum collected 10-14 days later may be required for best evidence for current infection. Cross-reactions occur with Yellow Fever immunization. For proper submission of mosquito specimens, please contact TDH Medical Entomology Lab (512) 458-7615.
Dermatomycosis	Culture Tissue Scrapings	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence.
Diabetes	None	None	Blood	Hexokinase Spectrophotometric	None	None	Specimens must be submitted in gray top vacuum tubes containing lithium iodoacetate. Serum accepted only by special request.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
<i>Dientamoeba fragilis</i>	None	None	None	None	Feces	Trichrome Stain	Fecal specimens must be sent in PVA and formalin. Proglottids must be sent in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.
Diphtheria	Culture Throat Swab	Isolation Identification Toxigenicity	None	None	None	None	Swabs should be submitted on Loeffler's Slant or in Amies or Stuart transport medium.
Diphyllobothriasis	None	None	None	None	Feces Proglottid Scolex	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Proglottids must be sent in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.
<i>Dipylidium caninum</i>	None	None	None	None	Feces Proglottid Scolex	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Proglottids must be sent in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.
Drug Testing	None	None	None	None	None	None	Tests are not offered in this Laboratory.
Dysentery, Amebic	----	----	----	----	----	----	See Amebiasis.
Dysentery, Bacillary	----	----	----	----	----	----	See Shigellosis.
Eastern Equine Encephalitis	Isolate Brain Mosquitoes	Isolation Identification	Single Serum Paired sera	Enzyme Immuno- assay IgG	None	None	Human isolation specimens must be frozen. A fourfold titer increase on paired sera is required for best evidence of current infection. Cross-reactions occur with Western Equine Encephalitis. For proper submission of mosquito specimens, please contact TDH Medical Entomology Lab (512) 458-7615.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Echinococcosis	None	None	Single Serum	Forwarded by TDH to CDC for testing	Hydatid Cyst Aspirate	Direct	Serum specimens are forwarded to the CDC. Liver cysts yield titers of 1:256 or higher; cysts at other sites stimulate antibody production less. Titers persist for years even after surgical removal of cysts. Cross-reactions to cysticercosis do occur.
Echovirus	Isolate Feces Throat Swab Spinal Fluid	Isolation Identification Typing	None	None	None	None	Isolation specimens must be sent frozen.
Ehrlichiosis	None	None	Paired Sera	Immunofluorescence	None	None	Sera are tested for presence of antibodies to <i>Ehrlichia chaffeensis</i> . Ideally, acute and convalescent-phase serum specimens, drawn at least 4 weeks apart, should be submitted.
Encephalitis	----	----	----	----	----	----	See specific disease entities.
Enteric Bacteria	----	----	----	----	----	----	See Salmonellosis and Shigellosis.
Enterobiasis	None	None	None	None	Tape Slide Worm	Direct	Use only clear, cellophane tape. Adult worms should be submitted in ETOH or formalin.
Enterovirus	----	----	----	----	----	----	See Coxsackievirus, Echovirus or Poliomyelitis.
Epstein-Barr Virus	None	None	None	None	None	None	
Erysipeloid	Culture	Isolation Identification	None	None	None	None	

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
<i>Escherichia coli</i> 0157:H7	Feces Culture Food	Isolation Identification Toxin testing Typing					Molecular typing performed at TDH upon request. Food specimens accepted from public health officials, or from physicians as specified in instructions for Food Poisoning.
Farmer's Lung	Culture Sputum	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing	None	None	Serum specimens are forwarded to the CDC. Antigens include <i>Micropolyspora faeni</i> , <i>Thermoactinomyces candidus</i> , and <i>Thermoactinomyces vulgaris</i> . Precipitin bands are presumptive evidence for actinomycotic hypersensitivity pneumonitis. There are false-positive reactions.
Fasciolopsis	None	None	None	None	Feces Fluke ID Tissue section	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Proglottids must be sent in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.
Fifth Disease	----	----	----	----	----	----	See Parvovirus.
Filariasis	None	None	None	None	Blood	Direct	
Fluorides	None	None	None	None	None	None	A chemical analysis is available with written request from dentist.
Food, Poisoning	Portion 25 grams minimum sample size for each pathogen to be tested	Isolation Identification Toxin Detection	None	None	None	None	Samples are accepted only if physician certifies that patient is still ill and aid to diagnosis is needed for treatment. Original sample must be retained by submitter for analysis by private laboratory if litigation results.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Food, Quality Check	----	----	----	----	----	----	Tests are not available in this Laboratory, except to public health officials and with prior arrangements.
<i>Fusobacterium</i>	Culture Tissue Aspirate	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Tissues are forwarded to the CDC for fluorescence. See instructions under Anaerobic Microbe Infections.
Galactosemia	None	None	Filter Paper Blood Spot	Paigan-Phage (Yoshida) Bioassay	None	None	Initial and follow-up specimens accepted only on infants and only in Newborn Screening Program. Fee charged for non-Medicaid patients.
Genetic Testing Biochemistry							See Appendix 1, Biochemical Genetics, for a list of tests performed to detect inherited metabolic disorders, and certain types of birth defects and chromosomal disorders. Specimen requirements and shipping instructions are also listed. Fee for service is charged.
Genetic Testing Cytogenetics							See Appendix 2-5, Cytogenetic Testing, for details of chromosome analysis and DNA testing provided. Specimen requirements and shipping instructions are also listed. Fee for service is charged.
German Measles	----	----	----	----	----	----	See Rubella.
Giardiasis	None	None	None	None	Stool	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Referred material accepted from hospital, private, and reference labs.
Glucose	----	----	----	----	----	----	See Diabetes.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Gonorrhea	Culture Cervical Swab Rectal Swab Throat Swab	Isolation Identification B-Lactamase Detection Genetic Probe	None	None	None	None	B-Lactamase testing is offered only on documented treatment failure cases. Microscopic screening by gram-stain is not offered. Genetic probe available only to those in STD Program and to adolescent THSteps (EPSDT) patients for whom collectors are available.
Granuloma Inguinale	None	None	None	None	Exudate	Direct	
<i>Haemophilus</i> species	Culture	Identification Typing (<i>H. influenzae</i> only) Beta-Lactamase Detection	None	None	None	None	<i>H. influenzae</i> strains from critical sources are sent to the CDC if untypeable.
Hansen's Disease	----	----	----	----	----	----	See Leprosy.
Hantavirus	None	None	Single Serum	Enzyme Immunoassay	None	None	Specimens must be accompanied with a history and approved by the Infectious Disease Epidemiology and Surveillance Division at TDH. Sera are tested for the presence of IgG and IgM antibodies specific for Sin Nombre virus. Further investigation can be done on tissue specimens or specimens from rodents at the CDC.
Hemoglobin, Total	None	None	Whole Blood-EDTA	Cyanmethemoglobin	None	None	Test is available to THSteps (EPSDT) and Title V patients.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Hemoglobinopathy	None	None	Filter Paper Blood Spot- Infants Whole Blood-EDTA THSteps (EPSDT), Title V Reference Specimens	Isoelectric Focusing Cellulose Acetate Citrate Agar DNA Confirmation Infants	None	None	Test is available to patients in the THSteps (EPSDT), Title V and Newborn Screening Programs only. Family studies for abnormal results available through reference service. Fee charged for non-Medicaid patients.
Hepatitis A	None	None	Single Serum	Enzyme Immunoassay for HAVAB-Total and HAVAB-IgM	None	None	Tests are available only to Department's epidemiologists to investigate outbreaks.
Hepatitis B	None	None	Single Serum	Enzyme Immunoassay for HBsAg, Anti-HBsAg, and HBcAb-Total	None	None	Tests are available only to TDH Screening programs.
Hepatitis C	None	None	Single Serum	Enzyme Immunoassay	None	None	Tests are available only to TDH Screening programs.
Herpes Simplex	Isolate Aspirate Tissue	Isolation Identification	None	None	None	None	Isolation specimens must be sent frozen. Isolation services are limited to designated public health programs.
Herpes Zoster	----	----	----	----	----	----	See Varicella.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Histoplasmosis	Culture Sputum Tissue Exudate	Isolation Identification Genetic Probe Confirmation	Single Serum Spinal Fluid	Complement Fixation Immunodiffusion	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded to the CDC for fluorescence. Serology is available for case diagnosis. A single serum is required. Titer parallels severity. Yeast-phase and mycelial-phase antigens are used. Cross-reactions are frequent with Blastomycosis and Coccidioidomycosis. Skin test affects antibody levels significantly. Demonstration of both an H and an M band is presumptive evidence for active disease. The M band may appear alone in either acute or chronic disease. The H band is found in active disease but is most affected by the skin test.
HIV-I, Screen	None	None	Serum, plasma Oral fluid Filter paper blood spot	Enzyme Immunoassay	None	None	Available only to high risk patients in health department clinics, adolescent THSteps (EPSDT) screens, or others with approved counseling programs.
HIV-I, Confirmation	None	None	Serum, plasma Oral fluid Filter paper blood spot	Western Blot	None	None	Available to patients in health department clinics only. Available on repeatedly reactive EIA specimens.
HIV-2	None	None	Serum, Plasma	Forwarded by TDH to CDC for testing.	None	None	Serum forwarded to the CDC from patients with reactive HIV-2 if HIV1/HIV2 combo EIA screen reactive or appropriate risk factors. Patient history required.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
HTLV I-II	None	None	Serum, Plasma	Forwarded by TDH to CDC for testing.	None	None	Serum forwarded to the CDC with similar criteria as that required for HIV-2 testing.
Hookworm	None	None	None	None	Feces	Direct Wet Smears Concentration	Fecal specimens must be sent in PVA and formalin.
Hyperlipidemia	----	----	----	----	----	----	See Cholesterol
Hypothyroidism	None	None	Filter Paper Blood Spot *Serum	Radioimmunoassay	None	None	Initial and follow-up specimens are accepted only on infants in Newborn Screening Program. Fee charged for non-Medicaid patients. Serum testing available only for abnormal neonatal follow-up and for monitoring diagnosed patients. Serum thyroid profile includes total T ₄ , free T ₄ , TSH, and TBG. See Newborn Screening Special Requirements and Instructions.
Infection Control Specimens	None	None	None	None	None	None	Refer these primary diagnostic specimens to an independent laboratory.
Infectious Mononucleosis	None	None	None	None	None	None	Refer these primary diagnostic specimens to an independent laboratory.
Influenza	Throat Swab Isolate	Isolation Identification Typing	Paired Sera	Complement Fixation	None	None	Isolation specimens must be sent frozen. Serum specimens are to be collected 14 days apart. A fourfold titer increase is evidence of current infection.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Insects and related arthropods	None	None	None	None	Spiders Lice Flies Mites Other arthropods	Identification	
<i>Isospora</i> species	None	None	None	None	Feces	Direct Wet Smears Concentration Acid Fast Stain	
Lead, Blood	-----	----	----	----	----	----	See Blood Lead.
Lead, Water	-----	-----	-----	-----	-----	-----	See Chemistry - Environmental.
Legionellosis	Culture Tissue Dirt Water Pleural Fluid Sputum Bronchial Washings	Isolation Identification Typing	Paired Sera Single Serum	Immunofluorescence	Tissue	Direct Fluorescent Antibody	A single serum will be tested only if three or more weeks after onset. A fourfold titer increase to 1:128 or greater is evidence of current infection. A single titer of 1:256 or greater is evidence of past infection. Environmental samples are accepted only from health officials in the study of multi-case outbreaks. Isolation specimens must be iced but not frozen.
Legionnaires' Disease	----	----	----	----	----	----	See Legionellosis.
Leishmaniasis	Tissue (Edge of Lesion)	Isolation Identification PCR-Walter Reed through TDH	Paired Sera	Forwarded by TDH to CDC for testing.	Tissue	Giemsa Stain H & E stain	Sera are forwarded to the CDC. Cross-reactions occur with Chagas' Disease. Specimens forwarded by TDH to Walter Reed with prior arrangement.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Leprosy	None	None	None	None	Tissue Skin Scrapings	Truant's Stain	Biopsy material goes to Gillis W. Long Hansen Disease Center, Carville, Louisiana
Leptospirosis	None	None	Paired Sera	Forwarded by TDH to CDC for testing.	None	None	Sera are sent to the CDC. Specimens positive in the Indirect Hemagglutination Test, qualitative screening test, are confirmed with a quantitative Microagglutination Test against a battery of antigens. A fourfold increase in titer is evidence of current infection. Extensive cross-reactions among leptospiral antigens are frequent.
Listeriosis	Food Isolate Blood Tissue	Isolation Identification Typing	None	None	None	None	Isolates from outbreaks are sent to The CDC for typing. Molecular typing performed at TDH. Food specimens accepted from public health officials, or from physicians as specified in instructions for Food Poisoning.
Loiasis	None	None	None	None	Blood Purple Top	Direct Giemsa stain	
Lobomycosis	Isolate Tissue	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Tissues are forwarded to the CDC for fluorescence.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Lyme Disease	Skin biopsy Skin scrapings CSF* *only if neurological symptoms have occurred	Isolation Identification	Single Serum Paired sera	Enzyme Immunoassay	Skin biopsy Skin scrapings	Direct Fluorescent Antibody	Tissue specimens should be collected aseptically from the peripheral edge of the erythema migrans and sent on wet ice in sterile PBS. Serum from patients with other spirochetal diseases, mononucleosis, and some autoimmune diseases may give false positive results. Since elimination of cross-reactive syphilitic serum from syphilis patients, increases the test specificity to $\geq 97\%$, all lyme reactive specimens are tested for the presence of reagins and treponemal specific antibodies. Patients with early lyme disease may have undetectable antibody levels. Treatment with antibiotics early after onset of ECM can also prevent development of antibodies. Fee for serology is charged. No charge for isolation.
Lymphocytic Choriomeningitis	Isolate Spinal Fluid Tissue	Isolation Identification	Paired Sera Spinal fluid	Forwarded by TDH to CDC for testing.	None	None	Isolation specimens must be sent frozen. Sera are forwarded to the CDC.
Lymphogranuloma Venereum	None	None	Paired Sera	Forwarded by TDH to CDC for testing.	None	None	LGV serology available at CDC with paired sera. Serology is by prior arrangement only. Once cleared, serum specimens are sent to the CDC.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Malaria	None	None	Single Serum	Forwarded by TDH to CDC for testing.	Thick/Thin Blood Smears Purple top Blood tube	Direct Stain Giemsa Wright	If blood films are negative but evidence for malaria is strong then serum is sent to the CDC. Serology is by prior arrangement only. Once cleared, serum specimens are sent to the CDC. Antibody may persist for years, so that an elevated titer cannot be used as evidence for current infection. Emphasis is placed on blood films.
Measles	----	----	----	----	----	----	See Rubella or Rubeola.
Melioidosis	Isolate Sputum Urine	Isolation Identification	None	None	None	None	
Meningitis, Amebic	----	----	----	----	----	----	See Primary Amebic Meningoencephalitis.
Meningitis, Aseptic	----	----	----	----	----	----	See Echovirus and Coxsackievirus.
Meningitis, Meningococcal	Isolate Blood Spinal Fluid	Isolation Identification Grouping	None	None	None	None	Isolates are sent to the CDC for sensitivity studies. Molecular typing at TDH upon request.
Microsporidiosis	None	None	None	None	Feces Other suspect tissue	Modified Trichrome Stain Gram Chromatope	Feces should be formalin preserved. Other suspect tissue-send tissue or stained slide.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Milk, Quality Check	Milk	Culture Inhibitors Phosphatase Coliforms Added Water Aflatoxin Somatic cell counts	None	None	Milk	Somatic Cell	Samples are accepted only from state health officials.
Mosquitoes	Live	Identification Virus Isolation	None	None	Adults Larvae Eggs	Speciation Pooling Rearing	Mosquitoes are accepted only from health officials who have been trained in state surveillance program.
Mumps	Isolate Spinal Fluid Urine Saliva	Isolation Identification	Single Serum Paired Sera	Enzyme Immuno- assay for IgG Immunofluorescence assay for IgM	None	None	Isolation specimens must be shipped frozen. Serum specimens are to be collected 14 days apart. A significant EIA antibody rise is evidence of current or previous infection.
Mycobacteriosis	Isolate Sputum Tissue Exudate Urine Stool Blood Body Fluids	Isolation Identification Susceptibility HPLC (culture confirmation) Genetic Probe (culture confirmation)	None	None	Isolate Sputum Tissue Exudate Urine Stool Blood Body Fluids	Truant's Stain	Primary diagnostic specimens and isolates go to TDH Lab in Austin. Primary diagnostic specimens >6 days old are unacceptable. Direct HPLC (presumptive identification only) performed on positive AFB smear primary diagnostic specimens. Pure culture isolates submitted to this Laboratory for definitive identification and drug susceptibilities. Molecular typing performed at TDH and regional center upon request.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Mycetoma	Isolate Tissue Exudate	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Primary diagnostic specimens to Texas Center for Infectious Diseases (TCID). Tissues are forwarded through this Laboratory to the CDC for fluorescence.
Mycoplasmosis	None	None	Paired Sera	Forwarded by TDH to CDC for testing.	None	None	
Newborn Screening	None	None	Filter paper Blood spot	See individual tests	None	None	Fee charged for non-Medicaid patients. See Phenylketonuria, Galactosemia, Congenital Adrenal Hyperplasia, Hypothyroidism, and Hemoglobinopathy.
Nocardiosis	Isolate Tissue Exudate Sputum Blood Body Fluids	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence. The Immunodiffusion Test at the CDC is an experimental test. Precipitin bands are presumptive evidence of disease.
Nosocomial Infections	-----	-----	-----	-----	-----	-----	Molecular epidemiology techniques available for hospital and similar institutional outbreaks. Contact Laboratory for collection and shipping instructions. Environmental specimens from infection control programs are not accepted.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Norwalk-like viruses	----	----	----	----	Feces	Electron Microscopy	Outbreak investigations only. Preapproval required (Virology - 512-458-7318) Specimen must be collected within 24 hours of onset and sent cold, not frozen.
Ornithosis	-----	-----	-----	-----	-----	-----	See Psittacosis.
Paracoccidioidomycosis	Isolate Tissue Sputum	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence. Serum is sent to the CDC. CF titer parallels severity. Cross-reactions do occur. Precipitin bands denote past or present disease.
Paragonimiasis	None	None	Single Serum	Forwarded by TDH to CDC for testing	Feces	Direct Wet Smears Concentration	Serum is sent to the CDC.
Parainfluenza	Isolate Throat Swab Nasopharyngeal Secretions	Isolation Identification Typing	Paired Sera	Complement Fixation	None	None	Isolation specimens must be shipped frozen. Serum specimens are to be collected 14 days apart. A fourfold titer increase is evidence of current infection.
Parvovirus B19	None	None	Serum, Plasma Spinal Fluid Amniotic Fluid Other Body Fluid	Enzyme Immunoassay	None	None	Presence of Parvo IgM indicates recent infection. Presence of Parvo IgG and absence of IgM is consistent with prior infection. Lack of Parvo IgM and IgG antibody indicates possible susceptibility to Parvovirus B19 infection.
Paternity Testing	None	None	None	None	None	None	Tests not offered in this Laboratory

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Penicilliosis	Isolate Tissue Sputum Exudate	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence.
Pertussis	Nasopharyngeal Swab Culture	Isolation Identification	None	None	Nasopharyngeal Film	Direct Fluorescent Antibody	Swabs for culturing must be plated immediately, placed in transport medium (Regan-Lowe without antibiotics) and shipped on cold packs.
Pesticides	None	None	None	None	None	None	Chemical analysis is available on environmental samples and only to state officials in the performance of their duties.
Phenylketonuria (PKU)	None	None	Filter Paper Blood Spot *Serum	Guthrie Inhibition Bioassay Fluorometric	None	None	Initial and follow-up specimens accepted only on infants and only in the Newborn Screening Program. Fee charged for non-Medicaid patients. *Serum specimens accepted only for abnormal neonatal follow-up. Serum testing includes phenylalanine and tyrosine. Serum or filter paper blood spots accepted for dietary monitoring of diagnosed patients. See Newborn Screening Special Requirements and Instructions.
Phycomycosis	-----	-----	-----	-----	-----	-----	See Zygomycosis.
Pinworm	-----	-----	-----	-----	-----	-----	See Enterobiasis.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Plague	Isolate Aspirate Blood Sputum Tissue	Isolation Identification	Single Serum	Hemagglutination	None	None	Transport in Cary-Blair Medium. Telephone Laboratory (512 458-7318) prior to shipping specimen.
Pneumococcus	-----	-----	-----	-----	-----	-----	See <i>Streptococcus pneumoniae</i> .
Pneumocystosis	None	None	None	None	Tissue Sputum Bronchial lavage	Giemsa Stain	
Poliomyelitis	Isolate Feces Throat Swab Spinal Fluid	Isolation Identification Typing Marker Detection	Paired Sera	Complement Fixation	None	None	Isolation specimens must be sent frozen. Serum specimens must be collected 14 days apart. A fourfold titer increase is evidence of current infection or recent immunization. Isolates are sent to the CDC for vaccine strain marker detection only with prior approval.
Primary Amebic Meningoencephalitis	Spinal Fluid Water Culture	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing	Spinal Fluid Water Brain tissue	Direct, culture Stained slide	Serum specimens are sent to the CDC with prior arrangement only. Survey of environmental samples is provided only to health officials with prior arrangements.
Protothecosis	Isolate Tissue	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Specimens are forwarded through this Laboratory to the CDC for fluorescence.
Psittacosis	None	None	Paired Sera	Forwarded by TDH to CDC for testing	None	None	Birds must be sent to Texas A&M University, School of Veterinary Medicine. Serum specimens collected 14 days apart are forwarded to the CDC with prior arrangement.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Q Fever	Blood Tissue	Isolation Identification	Single Serum Paired Sera	Immunofluorescence Assay	None	None	Serum specimens must be collected 14 days apart. A fourfold titer increase is evidence of current infection.
Rabies	Human Tissue Animal Head Isolate	Isolation Identification	None	None	Animal Head Human Tissue	Direct Fluorescent Antibody	Whole animal carcasses are not accepted, except for bats and similar very small mammals. Heads must not be frozen. It is required by law that the health laboratory be informed of the shipment of a head: dial 1-800-252-8163. Cage-raised pets are not tested.
Radiation	None	None	None	None	None	None	Analysis on environmental samples is available only to Radiation Control personnel.
Red Tide Analysis	----	----	----	----	----	----	See Brevitoxin
Reference Services	-----	-----	-----	-----	-----	-----	See specific agents or diseases.
Relapsing Fever	Whole Blood	Isolation Giemsa Stain	Single Serum Paired Sera	Forwarded by TDH to CDC for testing.	Whole Blood Soft ticks	Giemsa Stain	Ticks are accepted if associated with human relapsing fever cases. The test procedure is used for investigational use and clinical history of the patient is required. Sera are forwarded to the CDC with prior approval.
Reovirus	Isolate Feces Throat Swab Nasal Aspirate	Isolation Identification	None	None	Isolate Feces	Electron Microscopy	Specimens must be sent frozen.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Respiratory Syncytial Virus	Isolate Throat Swab Nasal Wash	Isolation Identification	Paired Sera	Complement Fixation	None	None	Serum specimens must be collected 14 days apart. A fourfold titer increase is evidence of current infection. Specimens for viral isolation must be sent iced, but not frozen. Ability to isolate RSV from specimens greater than 72 hours old is minimal.
Rhinosporidiosis	Isolate Tissue	Isolation Identification	None	None	Tissue	Direct Fluorescent Antibody	Tissue specimens are sent to the CDC for fluorescence.
RhoGAM	----	-----	-----	-----	-----	-----	See Blood Typing.
<i>Rickettsia</i>	-----	-----	-----	-----	-----	-----	See specific disease entities.
Ringworm	Isolate Scrapings	Isolation Identification	None	None	Scrapings	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence.
Rocky Mountain Spotted Fever	Tick Tissue	Isolation Identification	Single Serum Paired sera	Immunofluorescence Assay	Tick Tissue	Chromatic Stain Direct Fluorescent Antibody	Serum specimens must be collected 14 days apart. A fourfold titer increase is evidence of current infection. Fee for service is charged.
Rotavirus	None	None	None	None	Feces Water	Electron Microscopy	Specimens for EM should be cold but not frozen. Water samples are accepted only with prior arrangement.
Round Worm	-----	-----	-----	-----	-----	-----	See Ascariasis.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Rubella (Immune Status)			Single Serum	Enzyme Immunoassay	None	None	Single specimens for immune status determination are accepted only from health units in the Rubella Screening Program and TDH employees.
Rubella	Isolate Tissue Respiratory secretions Urine CSF	Paired Sera Single Serum	Paired Sera Single Serum	Enzyme Immunoassay			Isolation specimens must be frozen. A significant rise in rubella-specific IgG antibody level on paired sera collected 10-14 days apart or the presence of significant Rubella-specific IgM antibody level in single sera is evidence of current infection. Single serum for determination of Rubella-specific IgM level should be collected 3 days after onset.
Rubeola (Measles)	Isolate Urine Tissue Throat Swab Nasopharyngeal Secretions Buffy Coat Blood	Isolation Identification	Paired Sera Single Serum Spinal Fluid	Enzyme Immunoassay	None	None	Isolation specimens must be frozen. A significant rise in measles-specific IgG antibody level on paired sera collected 10-14 days apart or the presence of significant measles-specific IgM antibody level on single serum indicates current infection. Single serum for determination of measles-specific IgM should be collected 4 days after onset. Spinal fluid is specimen of choice for diagnosing subacute sclerosing panencephalitis.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Salmonellosis	Isolate Feces Blood Food	Isolation Identification Grouping Typing Phage Typing	None	None	None	None	Fecal specimens must be submitted in buffered glycerol saline solution and are accepted only from public health officials. Phage typing on approved cases done at the CDC. PFGE for strain relatedness done at TDH. Contact Lab for submission instructions. Molecular analysis at TDH upon request.
Schistosomiasis	None	None	Single Serum	Forwarded by TDH to CDC for testing	Feces- <i>Schistosoma mansoni</i> , <i>Schistosoma japonicum</i> Urine - <i>Schistosoma haematobium</i>	Direct Concentration Urine filtration	Serological testing at the CDC is available if urine and stool specimens have been examined and are negative and if this remains a possibility.
Shigellosis	Isolate Feces	Isolation Identification Grouping Typing	None	None	None	None	Fecal specimens must be submitted in buffered glycerol saline solution and are accepted only from public health officials. Molecular analysis at TDH upon request.
Sickle Cell Anemia	-----	-----	-----	-----	-----	-----	See Hemoglobinopathy.
Spiders	None	None	None	None	Spider	Identification	Submission in alcohol is preferred.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Sporotrichosis	Isolate Aspirate	Isolation Identification	Single Serum	Forwarded by TDH to CDC for testing.	Aspirate Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence. A titer of 1:16 provides presumptive evidence of infection.
St. Louis Encephalitis	Isolate Brain Tissue Blood CSF Mosquitoes	Isolation Identification	Paired Sera Single Serum	Enzyme Immuno- assay (IgM capture and IgG)	Mosquitoes	None	Human isolation specimens must be frozen. Serological cross-reactions with Yellow Fever and Dengue Fever disease and immunization. While a single serum may be tested, a second specimen collected 7-14 days later may be required for best evidence of recent infection. For proper submission of mosquito specimens, please contact TDH Medical Entomology Lab (512) 458-7615.
<i>Staphylococcus</i>	Isolate Food	Identification "Phage Typing" is not available. See special requirements. TSST-1 testing Isolation Enterotoxin testing	None	None	None	None	Phage typing no longer available. PFGE for strain relatedness done at TDH. Contact Laboratory for submission instructions. Food specimens accepted from public health officials, or from physicians as specified in instructions for Food Poisoning.
<i>Streptococcus</i> , Group A	None	None	None	None	None	None	Strains from systemic cases are sent to the CDC for M and T protein typing with prior approval.
<i>Streptococcus pneumoniae</i>	Culture	Identification Typing	None	None	None	None	Cultures are sent to the CDC for typing only with prior approval.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Strongyloidiasis	None	None	Single Serum	Forwarded by TDH to CDC for testing.	Feces Concentration Sputum	Direct	Fecal specimens must be sent in PVA and formalin. Serum specimens are sent to the CDC. Referred material accepted from hospital, private, and reference labs.
Swimming Pool Water	None	None	None	None	None	None	Coliform testing is provided under special circumstances only and with prior arrangement.
Syphilis	None	None	Single Serum Spinal Fluid	Rapid Plasma Reagin Card, Treponema pallidum particle Agglutination, Fluorescent Treponemal Antibody Absorbed, Venereal Disease Research Laboratory	None	None	FTA-ABS is for in-house use only or with justification. TP-PA is run only if the RPR Card test results performed at TDH are reactive. Otherwise, justification is required for performing TP-PA test. VDRL is run on spinal fluid.
Taeniasis	None	None	None	None	Feces Proglottid Scolex	Direct Concentration Clearing	Fecal specimens must be submitted in PVA and formalin. Submit proglottid in ethyl alcohol. Referred material accepted from hospital, private, and reference labs.
Tapeworm, Other <i>Diphyllobothrium latum</i> <i>Hymenolepis nana</i> <i>Hymenolepis diminuta</i>	None	None	None	None	Proglottid Scolex Feces	Clearing exam	
Tetanus	Isolate Tissue	Isolation Identification Toxin Selection	None	None	None	None	

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Thyroid Stimulating Hormone (TSH)	None	None	Filter Paper Blood Spot Serum	Radioimmunoassay	None	None	Test is available in Newborn Screening Program only and only if T ₄ is abnormal. See T ₄ , below.
Thyroxine (T ₄)	None	None	Filter Paper Blood Spot Serum*	Radioimmunoassay	None	None	See Hypothyroidism
Ticks	Tick	Isolation	None	None	Tick	Direct Identification Chromatic Stain Direct Fluorescent Antibody	All ticks are tested for rickettsia. Only ticks received alive are tested for both spirochetes and rickettsia.
TORCH Battery	None	None	None	None	None	None	
Toxocariasis	None	None	Single Serum	Forwarded by TDH to CDC for testing.	Worm ID	Direct exam	Serum specimens are forwarded to the CDC.
Toxoplasmosis	None	None	Single Serum Paired Sera	Enzyme Immuno- assay (IgM) Indirect Fluorescent Antibody (IgG)	Tissue	Giemsa Stain	Diagnosis in a newborn requires either a significant rise in toxoplasma IgG level or positive toxoplasma IgM test and IgG titer equivalent to the maternal IgG titer. For serodiagnosis of acute infection in obstetric patients, titers of 1:64 are usually accepted as minimal for IgM, and titers of 1:1024 are minimal for IgG in adults. For ocular toxoplasmosis, titers as low as 1:16 can be significant, however, the disease is diagnosed clinically. In AIDS patients, toxoplasma IgG and IgM antibody levels are low or not detected.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Trachoma	Exudate	Isolation Identification DNA Probe	Paired Sera	Forwarded by TDH to CDC for testing.	Exudate	Direct Fluorescent Antibody	See Lymphogranuloma Venereum. Exudate sent to the CDC for fluorescence. LGV serology available at CDC. Serology is by prior arrangement only. Once cleared, serum specimens are sent to the CDC.
Trichinelliasis	None	None	Single Serum	Forwarded by TDH to CDC for testing.	Biopsy Tissue	Direct	Serum specimens are forwarded to the CDC.
Trichinosis	----	----	----	----	----	----	See Trichinelliasis.
Trichuriasis	None	None	None	None	Feces Worm	Direct Concentration Exam ID	Fecal specimens must be sent in PVA and formalin. Referred material accepted from hospital, private, and reference labs.
Trypanosomiasis	Blood Whole green or purple top	None	None	None	Blood Lymph Node Aspirate	Direct	See also Chagas' Disease.
Tuberculosis	Sputum Gastric Wash Urine Culture Blood Tissue Exudates Body Fluids	Isolation Identification Drug Susceptibility HPLC (culture confirmation) Genetic Probe (culture confirmation)	None	None	Culture Sputum Body Fluids Tissue Exudates	Truant's Stain	AFB positive cultures accepted for definitive identification and drug susceptibility testing, where appropriate. Molecular analysis at TDH and regional center upon request.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Tularemia	Culture Blood Culture Tissue Lymph Node	Isolation Identification	Single Serum Paired Sera	Agglutination	None	None	A titer of 1:320 or greater is significant. Serum specimens are to be collected 7 days apart. Fourfold titer increase is evidence of current infection. Cross-reactions occur with <i>Brucella</i> species. Telephone Laboratory prior to shipping specimen.
Typhoid Fever	-----	-----	-----	-----	-----	-----	See Salmonellosis.
Typhus	None	None	Single Serum	Immunofluorescence	None	None	Serum specimens must be collected 14 days apart. A fourfold titer increase is evidence of recent infection. Fee for service is charged.
Tyrosinemia	None	None	Serum	McCamin-Robbins Fluorometry	None	None	Follow-up and monitoring specimens accepted only on infants in the Newborn Screening Program.
Undulant Fever	-----	-----	-----	-----	-----	-----	See Brucellosis.
Urethritis	TransGrow Culture	Isolation Identification	None	None	None	None	See Gonorrhea.
Varicella	Isolate Vesicle fluid	Isolation Identification	Paired Sera	Enzyme Immunoassay	None	None	Isolation specimens must be sent frozen. Serum specimens are to be collected 10-14 days apart. A significant rise in antibody level is evidence of current infection.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Venezuelan Equine Encephalitis	Isolate Spinal Fluid Nasopharyngeal Swabs Blood	Isolation Identification	Paired Sera Single Serum	Enzyme Immunoassay	Mosquitoes	None	Human isolation specimens must be sent frozen. Serological cross-reactions occur with Eastern and Western Equine Encephalitis. While a single serum may be tested, a second specimen collected 10-14 days apart may be required for best evidence of recent infection. For proper submission of mosquito specimens, please contact TDH Medical Entomology Lab (512) 458-7615.
<i>Vibrio parahaemolyticus</i> and other <i>Vibrio</i> species	Culture Feces Shellfish	Isolation Identification	None	None	None	None	Fecal specimens must be submitted to culture rapidly or shipped on Cary-Blair Transport Medium. Shellfish accepted only from public health officials.
Vincent's Angina	None	None	None	None	None	None	Testing not performed.
Water Testing, Bacteriological	Water	Coliform Total Coliform <i>E. coli</i> Presence/absence No longer do enumeration	None	None	None	None	Samples must be from potable water source in approved sample container and submitted within 30 hours. Fee for service is charged. See Coliform.
Water Testing, Chemical	-----	-----	-----	-----	-----	-----	See Chemistry-Environmental.
Water Testing, <i>Cryptosporidia</i> & <i>Giardia</i> MPA (Micro particulate analysis)	----	----	----	----	Water filter	Direct Exam IFA	Specimens accepted only through TNRCC.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
Western Equine Encephalitis	Isolate Spinal Fluid CSF Blood Brain Tissue Mosquitoes	Isolation Identification	Paired sera Single Serum	Enzyme Immunoassay	Mosquitoes	None	Human specimens for isolation must be sent frozen. Serological cross-reactions occur with Venezuelan and Eastern Equine Encephalitis. While a single serum may be tested, a second specimen collected 10-14 days apart may be required for best evidence of recent infection. For proper submission of mosquito specimens, please contact TDH Medical Entomology Lab (512) 458-7615.
Whooping Cough	----	----	----	----	----	----	See Pertussis.
Worm, Miscellaneous Identification	None	None	None	None	Worm (whole) in alcohol	Direct Concentration	Fecal specimens must be sent in PVA and formalin. Adult worms should be submitted in ethyl alcohol or formalin. Referred material accepted from hospital, private, and reference labs.
Yellow Fever	Isolate Tissue Blood	Isolation Identification	Paired Sera	Forwarded by TDH to CDC for testing.	None	None	Specimens for isolation must be frozen. Serum specimens are to be collected 14 days apart, and will be submitted to the CDC when accompanied by immunization, travel, and clinical history. A fourfold titer increase is evidence of current infection. Cross-reactions occur with Dengue Fever and immunization.
<i>Yersinia pestis</i>	-----	-----	-----	-----	-----	-----	See Plague.

Disease or Agent	Culture Testing		Serological Testing		Microscopic Examination		Special Requirements and Instructions
	Specimens	Tests	Specimens	Tests	Specimens	Tests	
<i>Yersinia enterocolitica</i>	Culture Feces Blood Tissue	Isolation Identification	None	None	None	None	
Zygomycosis	Culture	Isolation	Single Serum	Forwarded by TDH to CDC for testing.	Tissue	Direct Fluorescent Antibody	Fungal isolates (pure culture) submitted to this Laboratory for definitive identification. Tissues are forwarded through this Laboratory to the CDC for fluorescence. Serum specimens are forwarded to the CDC for experimental tests.

Please note:

TDH-Texas Department of Health (<http://www.tdh.state.tx.us>)

CDC-Centers for Disease Control and Prevention

TCID-Texas Center for Infectious Diseases, Women's Health Laboratories, San Antonio (<http://www.tdh.state.tx.us/women/wmhlabs.htm>)

TNRCC-Texas Natural Resource Conservation Commission

Appendix 1

Genetic Testing Center

Biochemistry Laboratory

The TDH Biochemistry Laboratory performs a wide range of tests to detect inherited metabolic disorders, and certain types of birth defects and chromosomal disorders.

- ! An experienced, certified clinical biochemical geneticist directs the highly - trained laboratory staff.
- ! The Biochemistry Laboratory provides fast, competitively priced testing while maintaining the highest standards of quality.
- ! All areas of the laboratory participate in external proficiency testing to ensure the most accurate test results possible.

Metabolic Testing

The Biochemistry Laboratory performs tests for amino acid, organic acid, urea cycle and lysosomal storage disorders. We provide interpreted metabolic test results to indicate the potential for inherited metabolic diseases. Metabolic studies may be ordered on an emergency, ASAP or routine basis. Upon request, the laboratory can provide emergency results in a matter of hours, which is vitally important for physicians treating certain conditions which may cause severe mental retardation or death in newborn infants.

Prenatal Studies

The Biochemistry Laboratory offers Triple Screens analyzing for alpha fetoprotein (AFP), human chorionic gonadotrophin (HCG), and unconjugated estriol (UE3) levels in maternal serum. Triple Screen results are used, along with maternal age, race, weight and diabetic status, to calculate the risk for trisomy 21, trisomy 18, and neural tube and ventral wall defects.

Amniotic fluid testing for AFP levels, and acetylcholinesterase and fetal hemoglobin, if needed, can reveal the presence of neural tube and ventral wall defects.

Reports

Abnormal metabolic and prenatal test results are phoned to the referral source as soon as they are completed. Written reports are either mailed or faxed immediately after the laboratory director reviews them.

Reporting Times:

Maternal serum Triple Screen.....2-3 days
 Emergency metabolic studies.....6-8 hours
 ASAP metabolic studies.....next working day
 Routine metabolic studies.....3-7 days
 Lysosomal enzyme studies.....7-14 days

For more information about our laboratory services, call our toll-free number: **1-800-687-GENE (1-800-687-4363)**

Genetic Testing Center Labs
 Texas Department of Health
 Bureau of Laboratories
 3600 E. McKinney, Denton, Texas 76201
 940-383-3561 Fax 940-382-6235

SUMMARY OF BIOCHEMICAL TEST REQUIREMENTS

Test	Amount & Type of Specimen	Storage/Shipping
Acetylcholinesterase	2 ml amniotic fluid	Ship immediately at room temp.
Alpha fetoprotein, amniotic fluid	2 ml amniotic fluid	Ship immediately at room temp.
Alpha fetoprotein, serum	2 ml maternal serum	Refrigerate. Ship at room temp.
Alpha fetoprotein	2 ml maternal serum	Refrigerate. Ship at room temp.
Human chorionic gonadotrophin		
Unconjugated estriol		
Amino acids, quantitative, urine, serum, or CSF	5 ml urine, or 2 ml serum or CSF	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.
Amino acids, single quantitative	2 ml serum or urine or CFS	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.
Amino acids, qualitative, urine	15 ml urine	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.

Glucosaminidase, N-Acetyl-a-D (Sanfillipo B)	1 ml serum or 1 ml plasma	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.
Hexosaminidase A&B (Tay Sachs), serum	2 ml serum	Freeze. Ship with dry ice.
Hexosaminidase A&B (Tay Sachs), white cell	10 ml heparinized blood	Ship immediately at room temp.
Lysosomal enzyme panel	10 ml heparinized blood	Ship immediately at room temp.
Lysosomal enzyme, single	10 ml heparinized blood	Ship immediately at room temp.
Metabolic screen	15 ml urine	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.
Mucopolysaccharides, thin layer	10 ml urine	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.
Organic acids, urine	10 ml urine, no preservatives	Refrigerate, freeze if stored over 24 hrs. Ship at room temp.
White cell pellet preparation	10 ml heparinized blood	Ship immediately at room temp.
Emergency fee (per test, per day)		

Laboratory certification numbers:

CLIA (HCFA) 45D0659909

CAP 26068-01

Medicare Provider 45-8651

Genetic Testing Center**Cytogenetics Laboratory**

The Cytogenetics Laboratory of the Genetic Testing Center is a unit of the Texas Department of Health, Bureau of Laboratories. Established in 1971, the laboratory serves the Texas citizens by providing quality chromosome analysis.

Services

- ! Chromosome Studies
 - Peripheral blood (emergencies & routine)
 - Amniotic fluid (prenatal)
 - Bone marrow (cancer cytogenetics and hematological disorders)
 - Unstimulated peripheral blood (cancer cytogenetics)
 - Lymph nodes (cancer cytogenetics)
 - Tissues (products of conception, biopsies, other).
- ! Establishment of cell lines and banking
- ! Culture and send out of cells for metabolic and DNA testing

Reporting Times

Specimen Type	Reporting Time
Emergency blood (preliminary report available within 72 hours)	3-5 Days
Routine blood	10-21 Days
Bone marrow	5-7 Days
Lymph nodes	5-7 Days
Amniotic fluid	6-10 Days
Tissue	3-6 Weeks

Certifications

- ! CLIA - 45D0659909
- ! CAP - 26068-01

Location and Contact Information

Address: 3600 East McKinney, Denton, Texas 76201
 Telephone: 940-383-3561, ext. 264
 EMail:Laboratory Supervisor
 EMail:Laboratory Section Chief (phone ext. 268)
 EMail:Laboratory Secretary (phone ext. 267)
 EMail:Business Support Supervisor (phone ext. 281)

Fax: 940-382-6235
 Toll-Free:800-687-GENE (4363)

Appendix 3

Genetic Testing Center

Cytogenetics Laboratory

CPT Code

Test	CPT Code
Amniotic Fluid Study	
Cell culture	88235
Chromosome analysis	88269-22
Blood chromosome study	
Cell culture	88230
Chromosome analysis	86262
Emergency blood chromosome study	
Cell culture	88230-22
Chromosome analysis	88262-22
Fragile X chromosome study	88250
Fibroblast chromosome study	
Cell culture	88233
Chromosome analysis	88262
Fibroblast culture for send-out	88233
Bone marrow	
Cell culture	88237
Chromosome analysis	88262
Mosaicism screening	88263
CBG bands	88283
NOR bands	88283
DA/DAPI banding	88283

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Appendix 4

Genetic Testing Center

Cytogenetics Laboratory

Specimen Information

Type of Specimen	Specimen Requirements	Storage & Shipping
Amniotic fluid	20 cc of amniotic fluid in 2 or 3 15cc sterile tubes	Store at room temp, ship same day
Blood - Adult	8 cc of peripheral blood with sodium heparin (green top tube)	Store at room temp, ship within 24 hours
Blood - Infant	3-5 cc of peripheral blood with sodium heparin (green top tube)	Store at room temp, ship same day
Fibroblast	4-10 mm of kidney, fascia, skin, D&C, umbilical cord, placenta (sterile). Place in thawed culture medium vial.	Store at room temp, ship within 24 hours
Bone marrow	2-3 cc of bone marrow (sterile). Collect with sodium heparin, place in thawed culture medium in sodium heparin tubes provided by the Genetic Testing Center	Store at room temp, ship same day delivery

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Appendix 5

Genetic Testing Center
Cytogenetics Laboratory

Indications

Most frequent indications for chromosome studies:

- Prenatal
 - ! Advanced maternal age
 - ! Fetal malformations, intrauterine growth retardation (IUGR), or neural tube defects detected by ultrasound
 - ! Abnormal AFP or Triple Screen results in maternal serum
 - ! Oligohydramnios or polyhydramnios
 - ! Previous history of Down syndrome (trisomy 21) or other chromosome abnormalities
 - ! Carrier status of a chromosome rearrangement giving risk for affected offspring (e.g. reciprocal translocations, pericentric inversions, etc.)

- Postnatal
 - ! Multiple congenital malformations
 - ! Presumption of a chromosomal abnormality (e.g. trisomies 13, 18, or 21; Turner syndrome, etc.)
 - ! Developmental delay with or without dysmorphic features
 - ! Mental retardation or learning disabilities of unknown etiology
 - ! Family history of mental retardation or chromosome abnormalities
 - ! Previous history of dysmorphic and/or stillborn offspring
 - ! Multiple miscarriages (2 or more)
 - ! Primary amenorrhea or fertility problems
 - ! Ambiguous genitalia or gender identification
 - ! Hematological disorders (e.g. leukemias, lymphomas, myelodysplasias, etc.)
 - ! Solid tumors

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Keywords

Keywords	Telephone*
*area code for all numbers (512) except where noted	
Accounts Receivable	458-7317
Bacterial Disease and testing	458-7611
Biogenetics Testing, Laboratory	1-800-687-4363 ext 277
Botulism testing	458-7214
CAH laboratory	458-7430
Certification, Drinking Water (Chemical)	458-7587
Certification, Milk Laboratory	458-7585
Certification, Shellfish Laboratory	458-7585
Certification, Water Laboratory (Micro)	458-7585
Cholesterol testing	458-7430
Congenital adrenal hyperplasia, laboratory	458-7430
Cytogenetics Testing	1-800-687-4363 ext 264
EPSDT Laboratory	458-7430
Environmental Testing	458-7587
Food Testing	458-7562
Galactosemia, laboratory	458-7430
Genetics	(940)383-3561 or (800) 687-4363
Hypothyroidism, laboratory	458-7430
Immunology	458-7592
Inorganic Chemistry Analysis	458-7587
Insects	458-7605
Laboratory Office	458-7318
Laboratory Forms	458-7661
Laboratory Reference Manual	458-7318
Laboratory Results (Microbiology and Newborn Screening	458-7578

Lead, Blood Testing	458-7430
Medical Entomology	458-7615
Metals Analysis	458-7587
Microbiological Testing, QA	458-7517
Newborn Screening, laboratory	458-7430
Nuclear Analysis	458-7587
Organic Chemistry	458-7587
Parasitology	458-7560
PKU, laboratory	458-7430
Purchasing, (Laboratory)	458-7318
Rabies	458-7491
Rh testing, Laboratory	458-7430
Safety, Laboratory	458-7318
Serology	458-7592
Sickle cell testing, laboratory	458-7430
Specimen Submission Information, Laboratory	458-7598
THSteps, Laboratory	458-7430
Tuberculosis/Mycology	458-7580
Viral Disease + Testing	458-7515
Water Testing, Microbiology	458-7562